Curriculum Vitae
Sonya Allayne Legg

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Education

1989-1992	**Imperial College, University of London**, UK Dynamical meteorology and oceanography, PhD. Thesis title: Open-ocean deep convection: the spreading phase. Thesis supervisor: John Marshall.
1986-1989	**Oxford University, Keble College**, UK Physics, BA Honours, First Class.

Positions Held

Sept 2004 - present	**Princeton University**, Princeton. *Research Oceanographer* in Program in Atmospheric and Oceanic Sciences.
May 2001 - present	**Woods Hole Oceanographic Institution**, Woods Hole. *Associate Scientist* Awarded tenure Jan 2005.
June 2003 - Sept 2003	**NOAA-GFDL and Princeton University**, Princeton *Visiting Fellow*
Sept 1997 - May 2001	**Woods Hole Oceanographic Institution**, Woods Hole. *Assistant Scientist*
Feb 1997 - Sept 1997	**University of California Los Angeles**, Los Angeles, USA. *Assistant Researcher* in Inst. for Geophysics and Planetary Phys.
Feb 1995 - Feb 1997	**Universities Corporation for Atmospheric Research**, Boulder, USA *NOAA Climate and Global Change program postdoctoral fellow.* (host institution: University of California Los Angeles)
Feb 1993 - Jan 1995	**University of Colorado**, Boulder, USA. *Postdoctoral Research Associate* in Joint Institute for Laboratory Astrophysics.
Feb 1993 - Jan 1995	**National Center for Atmospheric Research**, Boulder, USA. *Visiting postdoctoral scientist*
Sep 1991 - Oct 1992	**Massachusetts Institute of Technology**, Cambridge, USA. *Research Fellow*
Oct 1990 - Jun 1991	**Imperial College**, London, UK. *Student laboratory teaching assistant*
Jul - Sep 1989	**Ecole Polytechnique Federal de Lausanne**, Lausanne, Switzerland. *Student assistant*
1986 - 1987	**Royal Aerospace Establishment**, Farnborough, UK. *Student Scientist*

Fellowships and Awards

2003	**NOAA-GFDL/Princeton University** Visiting Fellowship
1995-1997	**National Oceanic and Atmospheric Administration**, USA, post-doctoral fellowship in Climate and Global Change
1989-1992	**Natural Environment Research Council**, UK, studentship.
1986-1989	**Ministry of Defense**, UK, student sponsorship.
1986-1989	**Keble College**, Oxford University, UK, Open Scholarship.

Teaching Experience

2004-present: Member of faculty of graduate program in Atmosphere and Ocean Sciences, Princeton University.
2001- 2004: Member of MIT-WHOI Joint program in oceanography "Joint Committee for Physical Oceanography", providing oversight and advisory role in graduate program
2000-2004: Thesis committee member for 2 students, chairman of the defense for 2 students' oral examinations, secondary advisor for 2 students
2000,2002,2003: Designed and taught new graduate course in Geophysical Turbulence, MIT/WHOI Joint Program in Oceanography.
1990-1991: Laboratory demonstrations for physics undergraduates, Imperial College.
Postdoctoral advisees: James Girton (2002-2004), Ulrike Riemenschneider (2004-present)
Summer Guest Students supervised: 2 Woods Hole undergraduate summer student fellows (1998,2002); University of Girona PhD student (2005)

Membership of Professional Societies

American Geophysical Union
European Geophysical Society
American Physical Society

Panels and Committees

MIT/WHOI Joint Committee for Physical Oceanography, 2000-2004
NSF review panel 2001
Universities' Corporation for Atmospheric Research member representative for WHOI 2002-2004
Coordinating PI for NSF/NOAA funded "Gravity Current Entrainment Climate Process Team", 2003-2006.
Co-convener of scientific sessions at AGU Ocean Sciences and EGS General Assembly
Facilitator for session on "Key Physical Processes" at CLIVAR workshop on Ocean Component of Climate Models, June 2004.
Associate member of IAPSO/SCOR working group 121 on Ocean Mixing
Member of US CLIVAR Process Studies and Model Improvement Panel

Refereed Publications

A heton model of the spreading phase of open-ocean deep convection, Legg S. and J. Marshall, 1993. *J. Phys. Oceanogr.*, **23**, 1040-1056.

Penetrative convection in rapidly rotating flows: Preliminary results from

numerical simulation, Julien K., S. Legg, J. McWilliams, and J. Werne, 1996. *Dyn. Atmos. Oceans*, **24** 237-249.

Hard-Turbulence in rotating Rayleigh-Benard convection, Julien K., S. Legg, J. McWilliams and J. Werne, 1996. *Phys. Rev. E* **53** R5557.

Rapidly rotating turbulent Rayleigh-Benard convection, Julien, K., S. Legg, J. McWilliams, and J. Werne, 1996. *J. Fluid Mech.* **322**, 243-273.

A heton perspective of baroclinic eddy transfer in localized ocean convection, Legg S., H. Jones, and M. Visbeck, 1996. *J. Phys. Oceanogr.* **26**, 2251-2266.

The influence of the ambient circulation on the spreading of convected fluid, Legg S. and J. Marshall, 1998. *J. Mar. Res.* **56**, 107-139.

Localization of ocean deep convection by a mesoscale eddy, Legg, S., J. Gao, and J. McWilliams, 1998. *J. Phys. Oceanogr.* **28** 944-970.

The Labrador Sea Deep Convection experiment, The LabSea Group, 1998. *Bull. American Met. Soc.* **79**, 2033-2058.

Plume structure in rotating convection. Part I: balances and ensemble statistics, Julien K., S. Legg, J. McWilliams and J. Werne, 1999. *J. Fluid Mech.* **391**, 151-187.

Modeled radar surface signature of deep ocean convection Fischer K.W., S. Legg, W. H. Munk, R.M. Shuchman, R.W. Garwood, and J.P.Palshook, 1999. *IEEE Transactions of geoscience and remote sensing* **37**, 2050-2067.

Temperature and salinity variability in heterogeneous ocean convection Legg S., and J.C. McWilliams, 2000. *J. Phys. Oceanogr.*, **30**, 1188-1206.

Convective modifications of a geostrophic eddy field Legg S. and J. C. McWilliams, 2001. *J. Phys. Oceanogr.*, **31**, 874-891

Vertical transport by convective plumes: modification by rotation, S. Legg, K. Julien, J. McWilliams, and J. Werne, 2001. *Phys. and Chem. of the Earth*, **26**, 259-262.

Sampling characteristics from isobaric floats in a convective eddy field, S. Legg and J. McWilliams, 2002. *J. Phys. Oceanogr.*, **32**, 527-544.

Internal wave breaking on concave and convex continental slopes, S. Legg, and A. J. Adcroft, 2003. *J. Phys Oceanogr.* **33**, 2224-2246.

Internal tides generated on a corrugated continental slope. Part I: Cross-slope barotropic forcing, S. Legg, 2004. *J. Phys Oceanogr.* **34**, 156-173.

Internal tides generated on a corrugated continental slope. Part II: Along-slope barotropic forcing, S. Legg, 2004. *J. Phys Oceanogr.* **34**, 1824-1838.

A simple criterion to determine whether convection is localized or distributed, S. Legg, 2004. *J. Phys Oceanogr.* **34**, 2843-2846.

Comparison of entrainment in overflows simulated by z-coordinate, isopycnal and nonhydrostatic models, S. Legg, R.W. Hallberg and J.B. Girton, 2005. *Ocean Modelling*, **11**, 69-97.

Preliminary simulations of internal waves and mixing generated by finite amplitude tidal flow over isolated topography, S. Legg and K.M.H. Huijts, 2005. *Deep Sea Research*, submitted.

Recent Invited Talks

CLIVAR workshop on "North Atlantic Thermohaline Circulation Variability", Kiel, 2004; IAPSO/SCOR symposium on "Ocean Mixing", Victoria, 2004; CLIVAR workshop on "The Ocean component of climate models", 2004; Southampton Oceanography Centre, 2003; Florida State University, 2003; Aha Hulikoa Hawaiian Winter Workshop on "Boundary mixing and its parameterization", 2003; University of Chicago, 2002; Workshop on z-coordinate ocean models, MIT, 2002; NOAA Geophysical Fluid Dynamics Laboratory, 2002; WHOI GFD Summer School rotating convection symposium, 2002; Courant Institute, 2001; Johns Hopkins University, 2001; Cargese International Summer School on "Stirring and Mixing", 2001; DOME workshop, Miami, 2001; AGU fall meeting, special session to mark 10 years of the UCAR postdoctoral program, 2000; Scripps Institute of Oceanography, 2000; California Institute of Technology, 2000; Aha Hulikoa Hawaiian Winter Workshop on "Internal Waves", 1999.